

**Westmoreland County Public Schools**  
**Integrated Instructional Pacing Guide**  
**Biology 2011 – 2012**

Text: Biology by Miller & Levine (published by Prentice-Hall)

**Week 1**

**Topics:**

Chapter 1 - The Science of Biology  
Chapter 2 - The Chemistry of Life

**SOL's:**

1d, 1f, 1g, 1i, 1j, 1k, 2a, 2c, 2e, 3a, 3b,4c,6g

**Lab:**

Measurement Lab

**Text Sections:**

1-1 What is Science?  
1-2 How Scientists Work  
1-3 Studying Life  
1-4 Tools and Procedures  
2-1 The Nature of Matter  
2-2 Properties of Water  
2-3 Carbon Compounds

**Week 2**

**Topics:**

Chapter 7 - Cell Structure and Function  
Chapter 8 - Photosynthesis

**SOL's:**

2a, 3d, 4a, 4c, 4d, 6c

**Lab:**

Density Lab

**Text Sections:**

7-1 Life is Cellular  
7-2 Eukaryotic Cell Structure  
7-3 Cell Boundaries  
7-4 The Diversity of Cellular Life  
8-1 Energy and Life  
8-2 Photosynthesis; An Overview

**Week 3**

**Topics:**

Chapter 9 - Cellular Respiration  
Chapter 10 - Cell Growth and Division

**SOL's:**

1e, 1i, 1j, 1m, 2d, 3d, 6a, 6f

**Lab:**

Potato Lab  
Mitosis Lab (onion & viewer)

**Text Sections:**

9-1 Chemical Pathways  
9-2 The Krebs Cycle & Electron Transport  
10-1 Cell Growth  
10-2 Cell Division

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**Week 4**

**Topics:**

Chapter 11 - Introduction to Genetics

Chapter 12 - DNA and RNA

**SOL's:**

2a, 2d, 2e, 3b, 3c, 4, 6a, 6b, 6d, 6f, 6e, 6g, 6h, 7d

**Text Sections:**

11-1 The Work of Gregor Mendel

11-2 Probability and Punnett Squares

11-3 Exploring Mendel's Genetics

12-1 DNA

12-2 Chromosomes and DNA Replication

12-3 RNA and Protein Synthesis

**Lab:**

Inherited Traits

DNA Oragami

**Week 5**

**Topics:**

Chapter 13 - Genetic Engineering

Chapter 14 - The Human Genome

**SOL's:**

2d, 6e, 6i, 7d

**Text Sections:**

13-1 Changing the Living World

13-2 Manipulating DNA

13-4 Cell Transformation

14-1 Human Heredity

14-2 Human Chromosomes

**Lab:**

Karyotype

Dihybrid Cross

**Week 6**

**Topics:**

Chapter 15 - Darwin's Theory of Evolution

Chapter 16 - Evolution and Population

**SOL's:**

1e, 2b, 2e, 6e, 7b, 7c, 7e, 8a, 8b, 8c, 8d

**Text Sections:**

15-1 The Puzzle of Life's Diversity

15-3 Darwin Presents His Case

16-1 Genes and Variation

16-2 Evolution as Genetic Change

**Lab:**

Modeling Adaptation (pg 387)

Q Lab (pg 401)

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**Week 7**

**Topics:**

Chapter 17 - The History of Life  
Chapter 18 - Classification  
Chapter 19 - Bacteria and Viruses

**SOL's:**

2e, 7b, 7c, 7e, 8a, 8d

**Lab:**

Dicotomous Key

**Text Sections:**

17-1 The Fossil Record  
17-2 Earth's Early History  
17-3 Evolution of Multicellular Life  
18-2 Modern Evolutionary Classification  
19-1 Bacteria  
19-2 Viruses  
19-3 Diseases Caused by Bacteria/Viruses

**Week 8**

**Topics:**

Chapter 20 - Protists  
Chapter 21 – Fungi

**SOL's:**

1l, 1m, 2c, 2e, 4a, 5a, 5b, 5f, 7b, 7c, 7e, 8a, 8d

**Lab:**

Live Culture Lab  
Make Culture Lab

**Text Sections:**

20-1 The Kingdom Protista  
21-1 The Kingdom Fungi  
21-3 Ecology of Fungi

**Week 9**

**Topics:**

Benchmark Testing  
Chapter 22 - Plant Diversity  
Chapter 23 - Roots, Stems, and Leaves

**SOL's:**

3a, 5a, 5b, 6b, 6c, 7a

**Lab:**

Flower

**Text Sections:**

22-1 Introduction to Plants  
22-5 Angiosperms - Flowering Plants  
23-1 Specialized Tissues in Plants

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**Week 10**

**Topics:**

Chapter 24 - Reproduction of Seed Plants  
Chapter 25 - Plant Responses and Adaptations  
Chapter 26 - Sponges and Cnidarians  
Chapter 27 - Worms and Mollusks

**SOL's:**

1a, 1b, 1e, 1j, 4b, 5b, 5c, 5d, 6c, 9d

**Lab:**

Seed Germination Lab  
Worm Dissection

**Text Sections:**

24-2 Seed Development and Germination  
24-3 Plant Propagation and Agriculture  
25-2 Plant Responses  
25-3 Plant Adaptations  
26-1 Intro. to Animal Kingdom  
26-2 Sponges  
26-3 Cnidarians  
27-1 Flatworms  
27-2 Roundworms  
27-3 Annelids  
27-4 Mollusks

**Week 11**

**Topics:**

Chapter 28 - Arthropods and Echinoderms  
Chapter 29 - Comparing Invertebrates  
Chapter 30 - Nonvert. Chordates, Fishes, Amphibians

**SOL's:**

1a, 1l, 5a, 5c, 7a

**Lab:**

Symmetry

**Text Sections:**

28-1 Introduction to Arthropods  
28-4 Echinoderms  
29-2 Form and Function of Invertebrates  
30-1 The Chordates  
30-2 Fishes  
30-3 Amphibians

**Week 12**

**Topics:**

Chapter 31 - Reptile and Birds  
Chapter 32 - Mammals  
Chapter 33 - Comparing Chordates

**SOL's:**

1b, 1e, 1g, 1h, 5a, 5c, 7a, 8a, 8b, 8d

**Lab:**

Egg

**Text Sections:**

31-1 Reptiles  
31-2 Birds  
32-1 Introduction to Mammals  
32-3 Diversity of Mammals  
33-3 Form and Function of Chordates

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**Week 13**

**Topics:**

Chapter 34 - Animal Behavior  
Chapter 35 - Nervous System

**SOL's:**

1b, 1c, il, 4d, 5c, 5e

**Text Sections:**

34-1 Elements of Behavior  
34-2 Patterns of Behavior  
35-1 Human Body Systems  
35-2 The Nervous System  
35-4 Divisions of the Nervous System  
35-5 Drugs and the Nervous System

**Lab:**

Trophisms

**Week 14**

**Topics:**

Chapters 36, 37, 38, 39 - Human Systems

**SOL's:**

1h, 1l, 3a, 3b, 5d, 5e, 6b, 6g, 7c

**Text Sections:**

36-1 The Skeletal System  
36-2 The Muscular System  
36-3 The Integumentary System  
37-1 The Circulatory System  
37-2 Blood & Lymph Syst.  
37-3 The Respiratory System  
38-1 Food and Nutrition  
38-2 The Process of Digestion  
38-3 The Excretory System  
39-1 The Endocrine System  
39-2 Human Endocrine System  
39-3 The Reproductive System  
39-4 Fertilization and Development

**Lab:**

Berry

**Week 15**

**Topics:**

Chapter 40 - The Immune System and Disease  
Chapter 3 - The Biosphere

**SOL's:**

1k, 2c, 5e, 6a, 9a, 9b

**Text Sections:**

40-1 Infectious Disease  
40-2 The Immune System  
40-3 Immune System Disorders  
40-4 The Environment and Your Health  
3-1 What is Ecology?  
3-2 Energy Flow  
3-3 Cycles of Matter

**Lab:**

Endocrine/Nervous (Mondy Book)

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**Week 16**

**Topics:**

Chapter 4 - Ecosystems and Communities  
Chapter 5 – Populations

**SOL's:**

1d, 1i, 1j, 9b, 9c, 9d, 9e

**Lab:**

Sampling Lab

**Text Sections:**

- 4-1 The Role of Climate
- 4-2 What Shapes the Ecosystem?
- 4-3 Biomes
- 4-4 Aquatic Ecosystems
- 5-1 How Populations Grow
- 5-2 Limits to Growth
- 5-3 Human Population Growth

**Week 17**

**Topics:**

Chapter 6 - Humans in the Biosphere  
Review

**SOL's:**

1i, 1j, 9d

**Lab:**

Polution/Water Testing

**Text Sections:**

- 6-1 A Changing Landscape
- 6-2 Renewable/Nonrenewable Resources
- 6-3 Biodiversity
- 6-4 Charting the Course of the Future

**Week 18**

**Topics:**

Review  
SOL Test/Finals

**SOL's:**

**Lab:**

**Text Sections:**